

What is claimed is:

1. A recording apparatus for recording video data to a record medium, comprising:

5 encoding means for encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

10 transforming means for transforming the data structure of encoded video data that is output from said encoding means into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced; and

15 recording means for recording data having the file structure to a record medium,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

20 wherein at least one data structure is matched with the first data unit.

2. A recording apparatus for recording video data to a rewritable optical disc, comprising:

25 encoding means for encoding video data corresponding to a compression-encoding process;

transforming means for transforming the data structure of encoded video data that is output from

said encoding means into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced; and

5 recording means for recording data having the file structure to an optical disc,

 wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

10 wherein the second data unit is matched with a successive record length of data written to the optical disc.

3. The recording apparatus as set forth in claim 1,

15 wherein the compression-encoding process is MPEG,

 wherein the group structure is GOP structure, and

20 wherein data of which a sequence header is added to each GOP is matched with the first data unit.

4. A recording apparatus for recording audio data to a rewritable optical disc, comprising:

25 transforming means for transforming the data structure of audio data or encoded audio data into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously

reproduced; and

recording means for recording data having the file structure to the optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein the second data unit is matched with a successive record length of data written to the optical disc.

5 5. A recording apparatus for recording video data and audio data to a record medium, comprising:

video encoding means for encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

audio output means for outputting compression-encoded or non-compressed audio data;

means for transforming the data structure of encoded video data that is output from said video encoding means and audio data that is output from said audio output means into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced and multiplexing the encoded video data and the audio data having the file structure; and

recording means for recording multiplexed data having the file structure to a record medium,
wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein at least one data structure of the encoded video data is matched with the first data unit.

6. A recording apparatus for recording video data and audio data to a rewritable optical disc, comprising:

video encoding means for encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

audio output means for outputting compression-encoded or non-compressed audio data;

means for transforming the data structure of encoded video data that is output from said video encoding means and audio data that is output from said audio output means into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced and multiplexing the encoded video data and the audio data having the file structure; and

recording means for recording multiplexed

data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

5 wherein the second data unit is matched with a successive record length of which data is successively written to the optical disc.

A 7. The recording apparatus as set forth in claim 5 ~~or 6~~,

10 wherein the duration of the encoded video data of the second data unit is the same as the duration of the encoded audio data of the second data unit in the multiplexed data.

A 8. The recording apparatus as set forth in claim 15 5 ~~or 6~~,

20 wherein the encoded video data of the second data unit and the encoded audio data of the second data unit are alternately placed in the multiplexed data, each of the encoded video data of the second data unit and the encoded audio data of the second data unit being matched with the successive record length.

A 9. The recording apparatus as set forth in claim 5 ~~or 6~~,

25 wherein the audio data is compression-encoded corresponding to ATRAC, and

wherein the first data unit of the file structure contains at least one sound unit of ATRAC.

A
10. The recording apparatus as set forth in claim
1, ~~2, 4, 5, or 6,~~

wherein the file structure further includes a
data portion containing management information.

5
A
11. The recoding apparatus as set forth in claim
1, ~~2, 4, 5, or 6,~~

wherein the file structure further includes a
data portion containing management information, and

wherein the data portion contains size
10 information of the first data unit and position
information of the second data unit.

12. A recording method for recording video data
to a record medium, comprising the steps of:

15 encoding video data in a group structure of a
plurality of frames corresponding to a compression-
encoding process in a combination of an inter-frame
predictive encoding process and a motion compensative
process;

20 transforming the data structure of encoded
video data into a file structure that can be processed
by a computer software program without a dedicated
hardware portion so that moving pictures and so forth
are synchronously reproduced; and

25 recording data having the file structure to a
record medium,

wherein the file structure has a first data
unit and a second data unit, the second data unit being

a set of the first data units, and

wherein at least one data structure is
matched with the first data unit.

13. A recording method for recording video data
to a rewritable optical disc, comprising the steps of:

encoding video data corresponding to a
compression-encoding process;

transforming the data structure of encoded
video data into a file structure that can be processed
by a computer software program without a dedicated
hardware portion so that moving pictures and so forth
are synchronously reproduced; and

recording data having the file structure to
an optical disc,

wherein the file structure has a first data
unit and a second data unit, the second data unit being
a set of the first data units, and

wherein the second data unit is matched with
a successive record length of data written to the
optical disc.

14. A recording method for recording audio data
to a rewritable optical disc, comprising the steps of:

transforming the data structure of audio data
or encoded audio data into a file structure that can be
processed by a computer software program without a
dedicated hardware portion so that moving pictures and
so forth are synchronously reproduced; and

recording data having the file structure to
the optical disc,

wherein the file structure has a first data
unit and a second data unit, the second data unit being
a set of the first data units, and

wherein the second data unit is matched with
a successive record length of data written to the
optical disc.

15. A recording method for recording video data
and audio data to a record medium, comprising the steps
of:

encoding video data in a group structure of a
plurality of frames corresponding to a compression-
encoding process in a combination of an inter-frame
predictive encoding process and a motion compensative
process;

outputting compression-encoded or non-
compressed audio data;

transforming the data structure of encoded
video data and audio data into a file structure that
can be processed by a computer software program without
a dedicated hardware portion so that moving pictures
and so forth are synchronously reproduced and
multiplexing the encoded video data and the audio data
having the file structure; and

recording multiplexed data having the file
structure to a record medium,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein at least one data structure of the encoded video data is matched with the first data unit.

16. A recording method for recording video data and audio data to a rewritable optical disc, comprising the steps of:

encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame, predictive encoding process and a motion compensative process;

outputting compression-encoded or non-compressed audio data;

transforming the data structure of encoded video data and audio data into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced and multiplexing the encoded video data and the audio data having the file structure; and

recording multiplexed data having the file structure to an optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein the second data unit is matched with a successive record length of which data is successively written to the optical disc.

17. A record medium on which a program for recording video data to a record medium has been recorded, the program causing a computer to perform the steps of:

encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

transforming the data structure of encoded video data into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced; and

recording data having the file structure to a record medium,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

wherein at least one data structure is matched with the first data unit.

18. A record medium on which a program for recording video data to a rewritable optical disc has been recorded, the program causing a computer to

perform the steps of:

encoding video data corresponding to a
compression-encoding process;

5 transforming the data structure of encoded
video data into a file structure that can be processed
by a computer software program without a dedicated
hardware portion so that moving pictures and so forth
are synchronously reproduced; and

10 recording data having the file structure to
an optical disc,

wherein the file structure has a first data
unit and a second data unit, the second data unit being
a set of the first data units, and

15 wherein the second data unit is matched with
a successive record length of data written to the
optical disc.

19. A record medium on which a program for
recording audio data to a rewritable optical disc has
been recorded, the program causing a computer to
20 perform the steps of:

transforming the data structure of audio data
or encoded audio data into a file structure that can be
processed by a computer software program without a
dedicated hardware portion so that moving pictures and
25 so forth are synchronously reproduced; and

recording data having the file structure to
the optical disc,

wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

5 wherein the second data unit is matched with a successive record length of data written to the optical disc.

20. A record medium on which a program for recording video data and audio data to a record medium has been recorded, the program causing a computer to perform the steps of:

10 encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

15 outputting compression-encoded or non-compressed audio data;

20 transforming the data structure of encoded video data and audio data into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced and multiplexing the encoded video data and the audio data having the file structure; and

25 recording multiplexed data having the file structure to a record medium,

wherein the file structure has a first data

unit and a second data unit, the second data unit being a set of the first data units, and

wherein at least one data structure of the encoded video data is matched with the first data unit.

5 21. A record medium on which a program for recording video data and audio data to a rewritable optical disc has been recorded, the program causing a computer to perform the steps of:

10 encoding video data in a group structure of a plurality of frames corresponding to a compression-encoding process in a combination of an inter-frame predictive encoding process and a motion compensative process;

15 outputting compression-encoded or non-compressed audio data;

20 transforming the data structure of encoded video data and audio data into a file structure that can be processed by a computer software program without a dedicated hardware portion so that moving pictures and so forth are synchronously reproduced and multiplexing the encoded video data and the audio data having the file structure; and

recording multiplexed data having the file structure to an optical disc,

25 wherein the file structure has a first data unit and a second data unit, the second data unit being a set of the first data units, and

